

10/521 109

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SEQUENCE LISTING

<110> TEDESCO, Francesco
MARZARI, Roberto

<120> Antibodies anti C5 of the complement and their use

<130> 50294/016001

<150> PCT/EP2003/007487
<151> 2003-07-10

<150> MI2002A001527
<151> 2002-07-11

<160> 35

<170> PatentIn version 3.1

<210> 1

<211> 342

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(342)

<223> Light chain of the TS-A12/22 antibody

<400> 1

gac atc cgg atg acc cag tct cca gac tcc ctg gct gtg tct ctg ggc
Asp Ile Arg Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
1 5 10 15

48

gag agg gcc acc atc aac tgc aag tcc agc cag agt gtt tta tac agc
Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser
20 25 30

96

tcc aac aat aag aac tac tta gct tgg tac cag cag aaa cca gga cag
Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
35 40 45

144

cct cct aag ctg ctc att tac tgg gca tct acc cgg gaa tcc ggg gtc
Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
50 55 60

192

cct gac cga ttc agt ggc agc ggg tct ggg aca gat ttc act ctc acc
Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80

240

atc agc agc ctg cag gct gaa gat gtg gca gtt tat tac tgt cag caa
Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
85 90 95

288

tat tat agt act cct cag ctc act ttc ggc gga agg acc aaa gtg gat
Tyr Tyr Ser Thr Pro Gln Leu Thr Phe Gly Gly Arg Thr Lys Val Asp

336

100

105

110

atc aaa
Ile Lys

342

<210> 2
<211> 114
<212> PRT
<213> Homo sapiens

<400> 2

Asp Ile Arg Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser
20 25 30

Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
35 40 45

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
85 90 95

Tyr Tyr Ser Thr Pro Gln Leu Thr Phe Gly Gly Arg Thr Lys Val Asp
100 105 110

Ile Lys

<210> 3
<211> 345
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1) .. (345)
<223> Heavy chain of the TS-A12/22 antibody

<400>	3																
cag	gta	cag	ctg	cag	cag	tca	gag	gga	ggc	gtg	gtc	cag	cct	ggg	agg		48
Gln	Val	Gln	Leu	Gln	Gln	Ser	Glu	Gly	Gly	Val	Val	Gln	Pro	Gly	Arg		
1			5				10					15					
tcc	ctg	aga	ctc	tcc	tgt	gca	gcg	tct	gga	ttc	acc	ttc	agt	agc	tat		96
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Tyr		
	20				25							30					
ggc	atg	aac	tgg	gtc	cgc	cag	gct	cca	ggg	aag	ggg	ctg	gag	tgg	gtt		144
Gly	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val		
	35				40			45									
tca	tac	att	agt	agt	agt	agt	acc	ata	tac	tac	gca	gac	tct	gtg			192
Ser	Tyr	Ile	Ser	Ser	Ser	Ser	Ser	Thr	Ile	Tyr	Tyr	Ala	Asp	Ser	Val		
	50			55			60										
aag	ggc	cga	ttc	acc	atc	tcc	aga	gac	aat	tcc	aag	aac	acg	ctg	tat		240
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Thr	Leu	Tyr		
	65			70			75				80						
ctg	caa	atg	aac	agc	ctg	aga	gcc	gag	gac	acg	gct	gtg	tat	tac	tgt		288
Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys		
	85				90				95								
gcg	aga	ggg	cct	ggt	atg	gac	gtc	tgg	ggc	caa	ggg	acc	acg	gtc	acc		336
Ala	Arg	Gly	Pro	Gly	Met	Asp	Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr		
	100				105				110								
gtc	tcc	tca															345
Val	Ser	Ser															
	115																

<210> 4
<211> 115
<212> PRT
<213> Homo sapiens

<400> 4

Gln	Val	Gln	Leu	Gln	Gln	Ser	Glu	Gly	Val	Val	Gln	Pro	Gly	Arg		
1			5				10				15					

Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Tyr	
	20				25							30				

Gly	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
	35				40			45								

Ser	Tyr	Ile	Ser	Ser	Ser	Ser	Ser	Thr	Ile	Tyr	Tyr	Ala	Asp	Ser	Val	
	50			55			60									

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Gly Pro Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
100 105 110

Val Ser Ser
115

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<210> 5  
<211> 750  
<212> DNA  
<213> Homo sapiens
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<220>
<221> CDS
<222> (1)..(750)
<223> scFv

<400> 5
gac atc cgg atg acc cag tct cca gac tcc ctg gct gtg tct ctg ggc 48
Asp Ile Arg Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
1 5 10 15

gag agg gcc acc atc aac tgc aag tcc agc cag agt gtt tta tac agc	96	
Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser		
20	25	30

tcc aac aat aag aac tac tta gct tgg tac cag cag aaa cca gga cag 144
 Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
 35 40 45

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cct cct aag ctg ctc att tac tgg gca tct acc cgg gaa tcc ggg gtc      192
Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
      50          55          60

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cct gac cga ttc agt ggc agc ggg tct ggg aca gat ttc act ctc acc 240
 Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
 65 70 75 80

atc agc agc ctg cag gct gaa gat gtg gca gtt tat tac tgt cag caa 288
 Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
 85 90 95

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tat tat agt act cct cag ctc act ttc ggc gga agg acc aaa gtg gat      336
Tyr Tyr Ser Thr Pro Gln Leu Thr Phe Gly Gly Arg Thr Lys Val Asp
          100          105          110

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atc aaa tcc qqa qqq tcq acc ata act tcq tat aat qta tac tat acq 384

Ile Lys Ser Gly Gly Ser Thr Ile Thr Ser Tyr Asn Val Tyr Tyr Thr			
115	120	125	
aag tta tcc tcg agc ggt acc cag gta cag ctg cag cag tca gag gga			432
Lys Leu Ser Ser Ser Gly Thr Gln Val Gln Leu Gln Gln Ser Glu Gly			
130	135	140	
ggc gtg gtc cag cct ggg agg tcc ctg aga ctc tcc tgt gca gcg tct			480
Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser			
145	150	155	160
gga ttc acc ttc agt agc tat ggc atg aac tgg gtc cgc cag gct cca			528
Gly Phe Thr Phe Ser Ser Tyr Gly Met Asn Trp Val Arg Gln Ala Pro			
165	170	175	
ggg aag ggg ctg gag tgg gtt tca tac att agt agt agt agt acc			576
Gly Lys Gly Leu Glu Trp Val Ser Tyr Ile Ser Ser Ser Ser Thr			
180	185	190	
ata tac tac gca gac tct gtg aag ggc cga ttc acc atc tcc aga gac			624
Ile Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp			
195	200	205	
aat tcc aag aac acg ctg tat ctg caa atg aac agc ctg aga gcc gag			672
Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu			
210	215	220	
gac acg gct gtg tat tac tgt gcg aga ggg cct ggt atg gac gtc tgg			720
Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Pro Gly Met Asp Val Trp			
225	230	235	240
ggc caa ggg acc acg gtc acc gtc tcc tca			750
Gly Gln Gly Thr Thr Val Thr Val Ser Ser			
245	250		
<210> 6			
<211> 250			
<212> PRT			
<213> Homo sapiens			
<400> 6			
Asp Ile Arg Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly			
1	5	10	15
Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser			
20	25	30	
Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln			
35	40	45	
Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val			
50	55	60	

Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
85 90 95

Tyr Tyr Ser Thr Pro Gln Leu Thr Phe Gly Gly Arg Thr Lys Val Asp
100 105 110

Ile Lys Ser Gly Gly Ser Thr Ile Thr Ser Tyr Asn Val Tyr Tyr Thr
115 120 125

Lys Leu Ser Ser Ser Gly Thr Gln Val Gln Leu Gln Gln Ser Glu Gly
130 135 140

Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser
145 150 155 160

Gly Phe Thr Phe Ser Ser Tyr Gly Met Asn Trp Val Arg Gln Ala Pro
165 170 175

Gly Lys Gly Leu Glu Trp Val Ser Tyr Ile Ser Ser Ser Ser Thr
180 185 190

Ile Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
195 200 205

Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu
210 215 220

Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Pro Gly Met Asp Val Trp
225 230 235 240

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
245 250

<210> 7
<211> 15
<212> DNA
<213> homo sapiens

<220>
<221> CDS

<222> (1)..(15)
<223> CDR1 region of VH

<400> 7
agc tat ggc atg aac
Ser Tyr Gly Met Asn
1 5

15

<210> 8
<211> 5
<212> PRT
<213> homo sapiens

<400> 8

Ser Tyr Gly Met Asn
1 5

<210> 9
<211> 51
<212> DNA
<213> homo sapiens

<220>
<221> CDS
<222> (1)..(51)
<223> CDR2 region of VH

<400> 9
tac att agt agt agt agt acc ata tac tac gca gac tct gtg aag
Tyr Ile Ser Ser Ser Ser Thr Ile Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

48

ggc
Gly 51

<210> 10
<211> 17
<212> PRT
<213> homo sapiens

<400> 10

Tyr Ile Ser Ser Ser Ser Thr Ile Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 11
<211> 18
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(18)
<223> CDR3 region of VH

<400> 11
ggg cct ggt atg gac gtc
Gly Pro Gly Met Asp Val
1 5

18

<210> 12
<211> 6
<212> PRT
<213> Homo sapiens

<400> 12
Gly Pro Gly Met Asp Val
1 5

<210> 13
<211> 63
<212> DNA
<213> artificial sequence

<220>
<223> linker

<220>
<221> CDS
<222> (1)..(63)
<223> linker VL-VH

<400> 13
tcc gga ggg tcg acc ata act tcg tat aat gta tac tat acg aag tta
Ser Gly Gly Ser Thr Ile Thr Ser Tyr Asn Val Tyr Tyr Thr Lys Leu
1 5 10 15

48

tcc tcg agc ggt acc
Ser Ser Ser Gly Thr
20

63

<210> 14
<211> 21
<212> PRT
<213> artificial sequence

<220>
<223> linker

<400> 14

Ser Gly Gly Ser Thr Ile Thr Ser Tyr Asn Val Tyr Tyr Thr Lys Leu
1 5 10 15

Ser Ser Ser Gly Thr
20

<210> 15
<211> 18
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> Peptide comprising cleavage site of C5 convertase. Corresponding
to aa 727-744 of mature human protein (P01031).

<400> 15

Lys Asp Met Gln Leu Gly Arg Leu His Met Lys Thr Leu Leu Pro Val
1 5 10 15

Ser Lys

<210> 16
<211> 20
<212> PRT
<213> Homo sapiens

<220>
<221> PEPTIDE
<222> (1)..(20)
<223> fibronectin derived peptide

<400> 16

Gly Glu Glu Ile Gln Ile Gly His Ile Pro Arg Glu Asp Val Asp Tyr
1 5 10 15

His Leu Tyr Pro
20

<210> 17
<211> 34

<212> DNA
<213> Artificial sequence /primer

<220>
<221> misc_feature
<222> (1)..(34)
<223> PCR primer

<400> 17
atccgagtgc acacctgtgg agagaaaaggc aaag

34

<210> 18
<211> 34
<212> DNA
<213> Artificial sequence /primer

<220>
<221> misc_feature
<222> (1)..(34)
<223> PCR primer

<400> 18
tcctcagcgc gcggctctgg tggcagaccg aagg

34

<210> 19
<211> 33
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(33)
<223> Sequence derived from AF237583 GenBank acc. number

<400> 19
caggcggcgc gcgggcagcc ccaggaacca cag

33

<210> 20
<211> 94
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(94)
<223> Sequence derived from AF237583 GenBank acc. number

<400> 20
acgtcgatcg cctgctgaat tcttaagtac tatccaggcc cagcagtggg tttgggattg

60

gtttgccact agttttaccc ggggacaggg agag

94

<210> 21
<211> 41
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(41)
<223> Sequence derived from AF237583 GenBank acc. number

<400> 21
aggcggcgcg cgacaaaaact cacacatgcc caccgtgccc a

41

<210> 22
<211> 33
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(33)
<223> Sequence derived from J00220 GenBank acc. number

<400> 22
caggcggcgcg gcgttccctc aactccacct acc

33

<210> 23
<211> 32
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(32)
<223> Sequence derived from J00220 GenBank acc. number

<400> 23
ccgctactag ttttacccgc caagcggtcg at

32

<210> 24
<211> 31
<212> DNA
<213> Mus musculus

<220>
<221> misc_feature
<222> (1)..(31)
<223> Sequence derived from L27437 GenBank acc. number

<400> 24
caggcggcgc gcggcagacc gaaggctcca c 31

<210> 25
<211> 32
<212> DNA
<213> Mus musculus

<220>
<221> misc_feature
<222> (1)..(32)
<223> Sequence derived from J00220 GenBank acc. number

<400> 25
ccgctactag ttttaccagg agagtggag ag 32

<210> 26
<211> 36
<212> DNA
<213> Mus musculus

<220>
<221> misc_feature
<222> (1)..(36)
<223> Sequence derived from L27437 GenBank acc. number

<400> 26
caggcggcgc gcggttgtaa gccttgata tgtaca 36

<210> 27
<211> 33
<212> DNA
<213> Rattus norvegicus

<220>
<221> misc_feature
<222> (1)..(33)
<223> Sequence derived from M28671 GenBank acc. number

<400> 27
caggcggcgc gcggctagt cagaaaacca cag 33

<210> 28
<211> 33
<212> DNA
<213> Rattus norvegicus

<220>

<221> misc_feature
<222> (1)..(33)
<223> Sequence derived from M28671 GenBank acc. number

<400> 28
ccgctactag ttttacccgg aggccgggag atg

33

<210> 29
<211> 33
<212> DNA
<213> Rattus norvegicus

<220>
<221> misc_feature
<222> (1)..(33)
<223> Sequence derived from M28671 GenBank acc. number

<400> 29
caggcgccgc gccacaaaatg ccctacatgc cct

33

<210> 30
<211> 35
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(35)
<223> Universal oligonucleotide for VL1 amplification.

<400> 30
caggtgtgca ctcggacatc crgdtgaccc agtct

35

<210> 31
<211> 35
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(35)
<223> nucleotide in position 29 is "n"
Universal oligonucleotide for VL2 amplification.

<400> 31
caggtgtgca ctcggatatt gtgwtgacac agwct

35

<210> 32
<211> 31

<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(31)
<223> Universal oligonucleotide for VL3 amplification.

<400> 32
caggtgtgca ctcgcagcct gtgctgcary c

31

<210> 33
<211> 35
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(35)
<223> Universal oligonucleotide for VL4 amplification.

<400> 33
caggtgtgca ctcgtccat gwgctgacwc agcca

35

<210> 34
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(29)
<223> Universal oligonucleotide for JH1 amplification.

<400> 34
gaccggcgcg cgagacrgt gaccagggt

29

<210> 35
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(29)
<223> Universal oligonucleotide for JH2 amplification.

<400> 35
gaccggcgcg cagagacggt gaccrtkgt

29